

REMARKS

Reconsideration of the rejections contained in the Office Action is respectfully requested. Currently, claims 1-5, 7, 11-16, and 20 are pending in this application.

Objection to claim 2

The Examiner objected to claim 2 because claim 2 uses the term A/Z which the Examiner felt could be mistaken as implying division. Applicants have amended claim 2 as suggested by the Examiner.

Rejection under 35 USC 112, second paragraph

Claims 1-5, 7, 9, 11-17, and 20 were rejected under 35 USC 112, second paragraph, as indefinite. Applicants have redrafted claim 1 to clarify how the working path and protection path of a protection cycle operate under failure to enable the nodes to individually determine where flows of working traffic will be placed on protection upon occurrence of a failure on the working path. In view of this amendment, applicants respectfully request that the rejection under 35 USC 112, second paragraph, be withdrawn.

Rejection under 35 USC 102

Claims 1, 4-5, 7, and 11 were rejected under 35 USC 102 as anticipated by Ellinas (U.S. Patent No. 6,331,905). This rejection is respectfully traversed in view of the amendments to the claims and the following arguments.

The preamble of claim 1 recites “a method of determining protection transmission unit allocations for flows of working traffic being carried on a working path through a communication network ... by nodes on a protection path...” (emphasis added). Independent claim 1 further recites that the method includes the steps of “distributing connection information ... to all nodes on the protection path...”; “individually determining, by each node on the protection path, which flows of working traffic on the working path are affected by the failure on the working path”; and “individually determining, by each node on the protection path, protection transmission unit allocations at that node for the flows of working traffic affected by the failure on the working path.”

Ellinas teaches a system in which a network node includes protection switches (see Ellinas at Fig. 3, boxes 33, 35, 37, etc.). If the central switch 49 fails, the protection switches can redirect traffic back out of the node onto a protection cycle so that the traffic will arrive at another port to be put back onto the working fiber. (Ellinas at Col. 5, lines 1-42, and more particularly at lines 30-42). In Ellinas, the protection cycles are set up before-hand so that working traffic may be redirected out of the failed node, passed over the protection cycle, and arrive back at the same node where it is then passed back onto working traffic. (Ellinas at col. 7, 36-49). For example, in Fig. 3B, Ellinas shows different cycle groups that may be used to redirect traffic out of a failed node to cause the traffic to come into the failed node at a different port where it can be protection switched back onto the working path.

Thus, in Ellinas, the protection cycles all start and stop at the same network node. Specifically, as shown in Fig. 1B, the network node 99 includes a central switch 49, and a series of protection switches that can redirect traffic from working to protection upon failure of the central switch 49. The protection cycles all start and stop at the network node 99 and are essentially protection paths that may be used to convey traffic from one port on the network node to another port on the network node so that traffic can be routed around the failed central switch.

Ellinas does not discuss the notion of how nodes on a protection path should determine where flows of working traffic that are affected by a failure on the working path will be placed on the protection path. First, Ellinas is focused on providing a way to find cycles that start and stop at the same node so that traffic may be routed around the failed central switch. Ellinas does not discuss how the other nodes on the network handle the traffic but simply assumes that the other nodes on the cycle will pass the traffic along over the protection cycle so that the traffic will return to the same node.

Second, in Ellinas, all traffic on the protection cycle is required to be transmitted back to the same network node – the nodes on the protection cycle are not required to pull traffic off of the protection cycle. Thus, the nodes on the protection cycle would not need to know the protection unit allocation associated with particular flows of working traffic, since the nodes on the protection cycle are not required to select particular flows of traffic to pull those flows of traffic off of the protection for transmission off of the protection cycle. Thus, there is no reason to provide the nodes on the protection cycle with information about the flows of traffic being transmitted over the protection cycle.

As noted above, claim 1 has been amended to highlight these differences. Specifically, claim 1 has been amended to recite that connection information about flows of working traffic is disseminated to nodes on the protection path before occurrence of a failure in the working path, that the nodes on the protection path individually determine which flows of working traffic are affected by a failure on the working path, and that the nodes on the protection path also individually determine protection transmission unit allocations, at that node, for the flows of working traffic affected by the failure. Each node performs this process individually using the connection information associated with the affected flows that was provided before occurrence of the failure. Since Ellinas does not anticipate a method of this nature, applicants respectfully request that the rejection under 35 USC 102 be withdrawn.

Rejections under 35 USC 103

Claim 3 was rejected under 35 USC 103 as unpatentable over Ellinas in view of Andersson (U.S. Patent No. 6,535,481). Claims 9, 16, and 17 were rejected under 35 USC 103 as unpatentable over Ellinas in view of Afferton (U.S. Patent No. 6,278,689). Claims 12-15 and 20 were rejected under 35 USC 103 as unpatentable over Ellinas in view of Lu (U.S. Patent No. 5,412,652).

None of these secondary references teach or suggest that nodes on a protection path should use connection information associated with flows of working traffic to determine where those flows of traffic will be located on protection. Andersson does not teach or suggest this concept, as explained by applicants in the previous response (See Amendment dated 11/17/2009 at page 10). Afferton teaches a system in which an OXC mesh is able to transform a double failure into a single failure that is restorable by normal ring protection mechanisms. Afferton is not concerned with how nodes on protection will determine protection unit allocation for flows of traffic on the ring. Lu teaches a system in which time slot interchange is allowed and in which tables are downloaded to each of the nodes on a SONET ring so that the nodes will know the location of the working flows when those flows are put on protection. However Lu does not enable the nodes to calculate this information from connection information but rather provides the nodes with this information during an initiation or reconfiguration process (Lu at col. 7, lines 47-50). Accordingly, none of the secondary references make up the deficiencies noted above in

connection with Ellinas. Thus, applicants respectfully submit that the claims of this application are patentable over Ellinas alone or in view of Andersson, Afferton, and/or Lu.

Conclusion

In view of foregoing claim amendments and remarks, it is respectfully submitted that the application is now in condition for allowance and an action to this effect is respectfully requested. If there are any questions or concerns regarding the amendments or these remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Extension of time

Applicants request a two month extension of time to respond to the outstanding Office Action. Payment of the fee for the two month extension of time is being submitted herewith. If any additional fees are due in connection with this filing, the Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 141315 (Ref: 16220ROUS01U).

Respectfully Submitted

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